Appl. No. 10/581,117
Final Amendment and/or Response
Reply to final Office action of 22 July 2008

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REMARKS / DISCUSSION OF ISSUES

Claims 1-20 are pending in the application.

The Office action rejects claims 1-4, 6, 9-14, and 20 under 35 U.S.C. 103(a) over Kever et al. (USPA 2003/0145239, hereinafter Kever) and Korst et al. (USP 6,061,732, hereinafter Korst). The applicants respectfully traverse this rejection.

The combination of Kever and Korst fails to teach or suggest adjusting the buffer size of a buffer memory to an optimum buffer size, such that the power consumption of a subsystem comprising a mass storage device and a buffer memory is minimal, as specifically claimed in claim 1, upon which claims 2-8 and 14-19 depend. Claim 9, upon which claims 10-12 and 20 depend, and claim 13 include similar features.

The Office action asserts that Kever teaches adjusting a buffer size such that the power consumption of a subsystem comprising a mass storage device and buffer memory is minimized ("said subsystem", Office action page 5, last 3 lines). The applicants respectfully disagree with this assertion, and note that this assertion is contrary to the Office action's acknowledgement that Kever fails to teach a subsystem comprising a mass storage device and a buffer memory (Office action, page 6, lines 4-5).

The Examiner's attention is requested to the applicants' FIG. 1, wherein the total power consumption is illustrated as a function of the power consumed by each of a mass storage device (HDD) and a buffer memory (SDRAM). As can be seen, the power consumed by the mass storage device decreases with the size of the buffer memory, while the power consumed by the buffer memory increases with the size of the buffer memory. As such, the optimal buffer size to reduce the total power consumption is dependent on the power consumed by each of the mass storage device and the buffer memory. As also taught by the applicants, the power consumed by each is dependent upon the speed of transfer, and thus the optimal buffer size for reducing the total power consumption is dependent upon the speed of transfer.

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Because Kever does not address the total power consumed by a combination of a mass storage device and a buffer memory, Kever cannot be said to teach or suggest adjusting the buffer size of a buffer memory to an optimum buffer size, such that the power consumption of a subsystem comprising a mass storage device and a buffer memory is minimal.

Korst teaches a combination of a mass storage device and a buffer memory, but Korst does not address the power consumed by this combination, and does not teach adjusting a buffer size to minimize power consumption, and thus does not cure the aforementioned lack of teaching by Kever of adjusting the buffer size based on the power consumed by the combination of a mass storage device and a buffer memory.

Further, neither Kever nor Korst teaches or suggests determining an optimum buffer size for which power consumption is a minimum for a given streaming bit-rate, as also claimed in each of the applicants' independent claims.

Because the combination of Kever and Korst fails to teach or suggest the elements of each of the applicants' independent claims, the applicants respectfully maintain that the rejection of claims 1-4, 6, 9-14, and 20 under 35 U.S.C. 103(a) over Kever and Korst is unfounded, and should be withdrawn.

The Office action rejects claims 5 and 15-18 under 35 U.S.C. 103(a) over Kever, Korst, and Kling et al. (USPA 2001/0003207, hereinafter Kling). The applicants respectfully traverse this rejection.

Each of these rejected claims is dependent on claim 1, and in this rejection, the Office action apparently relies on Kever and Korst for teaching the elements of claim 1. As noted above, the combination of Kever and Korst fails to teach the elements of claim 1; accordingly, the applicants respectfully maintain that the rejection of claims 5 and 15-18 under 35 U.S.C. 103(a) that relies on Kever and Korst for teaching the elements of claim 1 is unfounded, and should be withdrawn.

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Further, each of claims 5 and 15-18 include the feature that the optimum buffer size is determined by a ratio of the stream bit rate and the disk bit rate (the duty cycle of the harddisk drive), and the Office action asserts that Kline provides this teaching at [0018]. The applicants respectfully disagree with this assertion. At the cited text, Kline teaches monitoring power consumption at a given "duty cycle of a switching signal in a power supply". The duty cycle of a switching signal in a power supply has no bearing on the duty cycle of a harddisk drive, and particularly is not determined by a ratio of a bit stream rate and a disk bit rate, as specifically claimed in each of claims 5 and 15-18. Accordingly, the applicants respectfully maintain that the rejection of claims 5 and 15-18 under 35 U.S.C. 103(a) over Kever, Korst, and Kline is unfounded, and should be withdrawn.

The Office action rejects claims 7 and 19 under 35 U.S.C. 103(a) over Kever, Korst, and Yoshida (USP 5,928,365). The applicants respectfully traverse this rejection.

Each of these rejected claims is dependent on claim 1, and in this rejection, the Office action apparently relies on Kever and Korst for teaching the elements of claim 1. As noted above, the combination of Kever and Korst fails to teach the elements of claim 1; accordingly, the applicants respectfully maintain that the rejection of claims 7 and 19 under 35 U.S.C. 103(a) that relies on Kever and Korst for teaching the elements of claim 1 is unfounded, and should be withdrawn.

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In view of the foregoing, the applicants respectfully request that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application to be in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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